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DOINGWHATWORKS

LEARNING TOGETHER ABOUT THE TOPICS OF ALGEBRA

Purpose	District mathematics leaders and administrators are encouraged to use this tool to become familiar with the recommendations of the National Mathematics Advisory Panel report about the content of school algebra. Individuals independently review selected print and media items from the Doing What Works website before coming together for a discussion about the priorities for their district.
Materials	List of Learning Options and Note-taking Guide Summary Record of Group Discussion Optional for individual review, *National Mathematics Panel Report Executive Summary*
Media	Options for individual review: *Visual Diagram: The Major Topics of School Algebra* *School Algebra Topics*, multimedia overview. (6:41) *A Coherent Algebra Framework,* video interview with Hung-Hsi Wu, University of California. (9:54) *Understanding the Major Topics of School Algebra,* interview with Wilfried Schmid, Harvard University. (7:11)
Topic	National Math Panel: Major Topics of School Algebra
Practice	Topics of Algebra

Learning Together About the Topics of Algebra

1. Identify individuals who represent leadership for middle and high school mathematics in the district. Depending on the configuration of roles and responsibilities in your district, the group might include experienced mathematics teachers, mathematics supervisors, curriculum specialists, building principals, and team or department leaders. Although the focus of this tool is algebra, it would be helpful to include teachers responsible for pre-algebra preparation.

2. Provide each participant with a copy of the Learning Options and Note-Taking Guide, and ask them to individually review at least two of the five learning options, using the guide as a way to record their reactions while viewing and reading. The group will use these notes in discussion about the implications of the National Mathematics Advisory Panel Report for coursework in the district. Providing learning options introduces participants to the "menu approach" that is characteristic of Doing What Works and allows for different learning preferences.

3. Allow approximately one week for website exploration, then reconvene the group for a discussion. As participants describe what they have gleaned from their review of media and print materials, make summary notes on a flip chart about the group's observations and questions about each topic. Ask questions such as:

    - What are the major messages about _____ (topic)?
    - What points resonate with you about _____ (topic)?
    - What observations do you have about what's happening in our district related to _____(topic)?
    - What concerns and questions do we need to address about _____(topic)?

    If there are more than ten participants, break into smaller groups to allow discussion opportunities for all. Seek consensus about the major messages or "take aways" in each topic area. Look for common themes or trends by grouping messages that are alike.

4. The summary of observations and questions can be taken into future discussions about curricular changes and professional development opportunities for algebra teachers. See the other tools related to the Topics of Algebra practice for suggestions about taking the next steps.

Learning Options and Note-Taking Guide

Prior to a group discussion, select and review at least two of the learning options listed below to familiarize yourself with the major points of the National Mathematics Advisory Panel Report related to the topics of school algebra. All materials will be found on the Doing What Works site in the section National Mathematics Advisory Panel: The Major Topics of School Algebra.

1. Visual Diagram
2. School Algebra Topics, multimedia overview
3. National Mathematics Panel Report Executive Summary and Report of the Task Group on Learning Processes
4. A Coherent Algebra Framework, interview with Hung-Hsi Wu, University of California
5. Understanding the Major Topics of School Algebra, interview with Wilfried Schmid, Harvard University.

As you review an item, list any key points according to the topic list below. Because you will be bringing these points into discussions with your colleagues, you may want to note a source so that you can refer to particular points during discussions.

Concept	Key Points to Remember	Source
Importance of algebra for all students		
Preparation for algebra		
Suggested topics of algebra: symbols and expressions		
Suggested topics of algebra: linear equations and quadratic equations		

Concept	Key Points to Remember	Source
Suggested topics of algebra: functions		
Suggested topics of algebra: algebra of polynomials; combinatorics and finite probability		
Making connections among topics		
Learning algebra: problem solving in algebra		
Learning algebra: procedural difficulties		
Learning algebra: importance and types of practice		